

## Patent Claims

1. Microwave-conducting arrangement, characterized in that it  
5 comprises a non-conductive body (12; 34), on at least a portion of whose  
surface of any shape are applied one, or more, electrically conductive  
layers (14).
2. Microwave-conducting arrangement as claimed in claim 1,  
10 characterized in that the surface of the body (12) is curved sinusoidally.
3. Microwave-conducting arrangement as claimed in one of the  
claims 1 or 2, characterized in that the surface of the body (36) is  
structured.  
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4. Microwave-conducting arrangement as claimed in one of the  
claims 1, 2 or 3, characterized in that the body (12) comprises elastic  
material.
- 20 5. Microwave-conducting arrangement as claimed in one of the  
claims 1 to 4, characterized in that the electrically conductive layer (14)  
has a preferred thickness of 0.1 - 100  $\mu\text{m}$ .
6. Microwave-conducting arrangement as claimed in one of the  
25 claims 1 to 5, characterized in that the electrically conductive layer (14) is  
manufactured by metallizing the surface of the body (12).
7. Microwave conducting arrangement as claimed in claim 6,  
characterized in that the metallizing of the surface of the body (12; 34) is  
30 done in a flame-spraying process.

8. Microwave conducting arrangement as claimed in claim 6, characterized in that the metallizing of the surface of the body (12; 34) is implemented by chemical metallizing.
- 5 9. Microwave conducting arrangement as claimed in claim 6, characterized in that the metallizing of the surface of the body (12; 34) is manufactured by galvanizing.
- 10 10. Microwave conducting arrangement as claimed in claim 6, characterized in that the metallizing of the surface of the body (12; 34) is done with a vapor-deposition process, especially sputtering or PVD-, or CVD-, coating.
- 15 11. Microwave-conducting arrangement as claimed in one of the preceding claims 1 to 10, characterized in that the metallized coating has a predetermined structure, for example one with gap-shaped interruptions for suppressing undesired modes, or for the in- or out-coupling of microwave signals.
- 20 12. Microwave-conducting arrangement as claimed in one of the preceding claims 1 to 11, characterized in that, of concern, is an externally metallized, cylindrical or conical insulator, which is applied as a hollow conductor.
- 25 13. Microwave-conducting arrangement as claimed in one of the preceding claims 1 to 11, characterized in that, of concern, is an externally and internally metallized, plastic tube, which is applied as a coaxial conductor.
- 30 14. Microwave-conducting arrangement as claimed in one of the preceding claims 1 to 11, characterized in that, of concern, is a funnel-shaped, internally metallized, plastic body, which is applied as a microwave horn-antenna.

15. Microwave-conducting arrangement as claimed in one of the preceding claims 1 to 11, characterized in that, of concern, is an externally metallized, plastic body, which is applied as an in-coupling.

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16. Microwave-conducting arrangement as claimed in one of the preceding claims 12 to 15, characterized in that the plastic body is composed of complex shapes and combines the functional elements: In-coupling, hollow conductor, and horn-antenna.

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17. Use of a microwave-conducting arrangement as claimed in claim 2 as a mode converter.

18. Use of a microwave-conducting arrangement as claimed in claim 14 having a non-ideal edge (38), as a dual-mode horn-antenna.

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19. Method for manufacturing a dielectric, microwave-conducting arrangement, characterized in that, on a non-conductive body having a surface of any shape, an electrically conductive and structured layer is applied to cover at least a portion of the surface.

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20. Method as claimed in claim 19, characterized in that the electrically conductive layer is manufactured by metallizing the surface of the body by means of a vapor-deposition process.

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21. Method as claimed in claim 19, characterized in that the electrically conductive layer is manufactured by metallizing the surface of the body by means of a flame-spraying process.

22. Method as claimed in claim 19, characterized in that the electrically conductive layer is applied by metallizing the surface of the body by means of chemical metallizing.

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23. Method as claimed in claim 19, characterized in that the electrically conductive layer is manufactured by metallizing the surface of the body by means of galvanizing.